

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Patent Application No. 09/943,353

**REMARKS**

Reconsideration and allowance of the subject application are respectfully requested.

Upon entry of this Amendment, claims 1-12 are pending in the application. In response to the Office Action, Applicant respectfully submits that the pending claims define patentable subject matter.

By this Amendment, Applicant has rewritten claims 4 and 10 in independent form including all of the limitations of base claims 1 and 7, respectively. Applicant respectfully submits that the amendments to claims 4 and 10 should be entered because the amendments do not raise new issues that would require further consideration and/or search.

Claims 1-5 and 7-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Saotome et al. (U.S. Patent No. 4,943,724; hereafter “Saotome”) in view of Horikawa (U.S. Patent No. 5,099,119) and Takashi et al. (U.S. Patent No. 5,113,078; hereafter “Takashi”). Claims 6 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Saotome in view of Horikawa and Takashi and Ohyama et al. (U.S. Patent No. 4,767,927; hereafter “Ohyama”). Applicant respectfully traverses the prior art rejections.

In the Amendment filed September 10, 2003, Applicant indicated that independent claims 1 and 7 would not have been rendered obvious in view of Saotome, Horikawa and Takashi because one of ordinary skill in the art would not have been motivated to modify Saotome to produce the claimed invention based on the teachings of Horikawa and Takashi.<sup>1</sup> In particular,

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<sup>1</sup> To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, there must be some suggestion or motivation to modify the reference teachings. In particular, “[t]o support the conclusion ... (footnote continued)

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ordinary skill in the art would not have been motivated to modify the device of Saotome to include a lead plate as taught by Horikawa, as the Examiner contends, because such modification (1) would render the device of Saotome unsatisfactory for its intended purpose, and (2) would not provide any benefit or serve any useful purpose. Further, Takashi does not provide any motivation or suggestion to modify Saotome or Takashi to utilize “a filter, which has transmitting properties with respect to the erasing light and has good absorbing properties with respect to the radiation, ... located on a side of the erasing light source, which side stands facing the stimulable phosphor sheet” in a radiation image recording and read-out device, as claimed.

In response to Applicant’s arguments that the references lack the requisite motivation to modify and combine the references to produce the claimed invention, the Examiner states that she “finds the motivation in protecting portions of the stimulable phosphor sheet 202 [of Fig. 8] in the method and apparatus of Saotome et al. from stray radiation.” However, Applicant notes that Figure 8 of Saotome shows that the stimulable phosphor sheet 202 is housed in a case which is separated into a first compartment which contains the first wind-up shaft 241 around which the stimulable phosphor sheet 202 is wound, a second compartment which contains the erasing section 230 and the portion of the stimulable phosphor sheet 202 on which an image is recorded, and a third compartment containing the image read-out section 220 and the second wind-up shaft around which the stimulable phosphor sheet is wound. Therefore, since the portions of the

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that the claimed invention is directed to obvious subject matter, either references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference.” *Ex parte Clapp* 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

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stimulable phosphor sheet 202 in the first and third compartments which are not to be subjected radiation are isolated from the second compartment where the radiation recording takes place, the Examiner's alleged motivation of "protecting portions of the stimulable phosphor sheet 202 ... from stray radiation" is not supported by the teachings of Saotome.

Further, Horikawa does not disclose that the lead plate 2 is located between the stimulable phosphor sheet (recording belt) 1 and the erasing light source 30 (i.e., "located on a side of the erasing light source, which side stands facing the stimulable phosphor sheet", as claimed). Instead, Horikawa discloses that the lead plate 2 is provided under the top portion of the endless recording belt (loop) 1 which is exposed to radiation during a recording operation so that the bottom and side portions of the recording belt 1 are "shielded from, and thus unaffected by, radiation emitted by the radiation source 11 during image recording" (see col. 7, lines 45-51). In other words, the lead plate 2 is positioned between the top and bottom portions of the recording belt 1 (i.e., inside the loop formed by the recording belt 1) rather than between the recording belt 1 and the erasing section 30.

Since Saotome teaches a recording sheet conveying structure wherein the stimulable phosphor sheet 202 is wound around and conveyed between the first wind-up shaft 241 and the second wind-up shaft 242, instead of an endless belt structure, Horikawa does not provide any reason or motivation to incorporate a lead plate beneath the stimulable phosphor sheet 202 of Saotome. That is, as discussed above, Horikawa teaches that the lead plate 2 is provided under the top portion of the endless recording belt (loop) 1 which is exposed to radiation during a recording operation so that the other (bottom and side) portions of the recording belt 1 are

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“shielded from, and thus unaffected by, radiation emitted by the radiation source 11 during image recording.” Thus, teachings of Horikawa with regard to the lead plate are not applicable to (and not a concern in) the device of Saotome due to the differences in the recording sheet conveying structures.

Moreover, Applicant respectfully submits the Examiner’s position could be based only impermissible hindsight in construing the references as she has to yield the present invention. In particular, when a prior art reference requires a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. Something in the prior art as a whole must suggest the desirability, and, thus the obviousness, of making the combination. *Uniroyal, Inc. v. Rudken-Wyley Corp.*, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

In response to Applicant’s arguments that the Examiner’s is using her knowledge of the present invention, in hindsight, to establish a *prima facie* case of obviousness, the Examiner states that she “has identified aspects of the method and apparatus Saotome et al. which would benefit from the location of a filter which has good absorbing properties and this does not include knowledge gleaned only from the applicant’s disclosure.” Further, the Examiner asserts that she “has identified art which shows that a plate of similar composition to that suggested by Horikawa may transmit the erasing light in the method and apparatus of Saotome et al. and this does not include knowledge gleaned only from the applicant’s disclosure.” However, neither Saotome nor Horikawa provide any motivation or suggestion for utilizing a filter which has transmitting properties with respect to the erasing light and has good absorbing properties with respect to the

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radiation, as claimed. That is, both Saotome and Horikawa merely disclose utilizing a lead plate as radiation shield. Moreover, the positions of the lead plates utilized in the devices Saotome and Horikawa do not indicate a need for allowing the erasing light to pass through the lead plate.<sup>2</sup>

As discussed in the Amendment filed September 10, 2003, utilizing a lead plate, as taught by Horikawa, on the side of the erasing light source 230 which faces the stimulable phosphor sheet 202 in the recording and read-out unit 201 of Saotome would prevent the erasing light emitted from the erasing section 230 from exposing the stimulable phosphor sheet 202. (i.e., the radiation energy remaining on the stimulable phosphor sheet 202 after the image read-out could not be released from the sheet 202). Thus, as the Examiner admits, such modification would render the device of Saotome unsatisfactory for its intended purpose. However, it is well settled that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). See MPEP 2143.01.

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<sup>2</sup> One of ordinary skill in the art would not have been motivated to replace the radiation shielding plate 208 (mislabeled as “209” in Fig. 8) of Saotome with a transparent lead plate since the light emitted from the erasing section 230 is blocked by the bottom portion of the phosphor sheet 202 and the light shielding plates 281-284 (i.e., the light never reaches the lead plate 208). Further, one of ordinary skill in the art would not have been motivated to modify Horikawa to replace the lead plate 2 of with a transparent lead plate since the light emitted from the erasing section 30 never reaches the lead plate 2 since the light is blocked by the bottom portion of the recording belt 1 and the shield plate 63 (i.e., to ensure thorough light shielding, the nip roller pairs 61, 62 and the side of the recording belt opposite from that facing the erasing light sources 32 are covered with the shield plate 63).

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Although the Examiner repeatedly asserts that Saotome and/or Horikawa provide motivation for incorporating a “filter” in the device of Saotome, neither Saotome nor Horikawa disclose, teach or suggest the use of a “filter” in a radiation image recording and read-out device. Rather, both Saotome and Horikawa teach using a conventional lead plate which is a “shield” (i.e., completely blocks all components from passing through). On the other hand, a “filter”, by definition, blocks some components while allowing other components to pass through. Since the Examiner is unable to locate any prior art reference in the relevant field of radiation image recording and read-out devices which discloses a “filter” of any type (let alone the claimed filter “which has transmitting properties with respect to the erasing light and has good absorbing properties with respect to the radiation”), the Examiner, using Applicant’s disclosure as a guide, looks to other fields to find to find a radiation shielding structure which allows light to pass through. In particular, the Examiner cites Takashi which discloses a transparent lead plate in a radiation shielding panel utilized as a work face of a glove box for handling radioactive substances.

The Examiner further alleges “[t]he knowledge of Takashi et al. that a lead-containing sheet may shield from radiation yet also transmit light is knowledge which is reasonably pertinent to the solution of the particular problem in shielding the sheet in Saotome et al. as suggested by Horikawa while retaining the transmission of erasing energy to the sheet as required by Saotome et al. even though the reference is from the "glove box" art.” However, as discussed above, neither Saotome nor Horikawa teach or suggest the use of a “filter” in a radiation image recording and read-out device, and neither reference provides the requisite

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motivation for modifying the device of Saotome to include the lead plate (shield) of Horikawa in position between the phosphor sheet and the erasing section. Further, Takashi does not provide the requisite motivation which is missing from Saotome and Horikawa since the transparent lead plate of Takashi is provided so that a user of the glove box may view the inside of box while handling a radioactive substance in the box and the reference does not provide any teachings directed to radiation image recording and read-out devices.

Thus, Applicant respectfully submits that the Examiner is impermissibly using the claimed invention as a "blueprint" to select features of prior art references to reconstruct the invention since the applied references clearly lack any teaching which would provide the requisite motivation that would have led one of ordinary skill in the art to modify the apparatus taught by the Saotome to arrive at the claimed invention.

Accordingly, Applicant respectfully submits that independent claims 1, 4, 7 and 10 should be allowable because one of ordinary skill in the art would not have been motivated to combine and modify the applied references to produce the claimed invention.

In addition to the limitations recited in claims 1 and 7, independent claims 4 and 10 require "the stimulable phosphor sheet is kept stationary at the position for image recording", and the image read-out means "is located between the stimulable phosphor sheet and the erasing light source."

With regard to claims 4 and 10, although the Examiner concedes "the stimulable phosphor sheet 2020 in the method of Saotome et al. in the embodiment of Fig. 8 is not kept stationary at the portion for image recording, nor is the image read-out means 220 located

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between the stimulable phosphor sheet and the erasing light source 230”, the Examiner alleges that Saotome discloses these features of the claimed invention in Fig. 7A. However, neither Fig. 7A nor Fig. 8 discloses positioning image read-out means between the stimulable phosphor sheet and the erasing light source, as claimed. Instead, both Figs. 7A and 8 show the image read-out section 120, 220 and the erasing light source 131, 231 are disposed side-by-side (i.e., next to each other) beneath the stimulable phosphor sheet 102, 202. Accordingly, the Examiner’s allegation that “it would have been obvious to place [the erasing light source] below the image read-out means [as] suggested by the embodiment of Fig. 7A” is not supported by the teachings of Saotome.

Accordingly, Applicant respectfully submits that the combined references do not teach or suggest all of the features of claims 4 and 10, and one of ordinary skill in the art would not have been motivated to combine and modify the applied references to include the missing features of the claimed invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,



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